



Department of Industrial &
Systems Engineering
Cullen College of Engineering

ISE FRIDAY SEMINAR

BROADEN HORIZONS EXTEND MINDS



Dr. Zhenhua Chen, Associate Professor
City and Regional Planning
College of Engineering, OSU
Columbus, OH

Date: Friday, November 07, 2025

Time: 1 - 1:50 pm

Location: D2 Lect2

Zoom Meeting ID: 97076565407. **Passcode:** 477211

A Machine Learning-based Framework to Evaluate the Nonlinear and Uncertain Impacts of Transportation Infrastructure

Abstract: Transportation systems today face increasing uncertainty from climate change, economic volatility, and evolving policy priorities. Traditional evaluation approaches often overlook the nonlinear and uneven impacts of infrastructure investments. This talk presents a problem-driven analytical framework that uses machine learning methods to address these challenges. Drawing on case studies from the U.S. and China, Dr. Chen will demonstrate how advanced modeling can uncover threshold effects, equity implications, and resilience outcomes across different transportation modes. The discussion highlights how integrating data-driven techniques with planning and policy insights can improve infrastructure decision-making in an uncertain world.

Short Bio: Dr. Zhenhua Chen is an Associate Professor of City and Regional Planning at The Ohio State University. He has held visiting scholar positions at the University of Cambridge, Waseda University, and the Asian Development Bank. He is a member of the intercity passenger rail committee of TRB. His research focuses on infrastructure planning, disaster impact assessment, and resilience. Dr. Chen has authored three books, co-edited two volumes, and published around 100 articles in leading journals such as Transportation Research Part A, Part D, Transport Reviews, and Environment Research Letters. He was named to Stanford's Global Top 2% Scientists List, ranking 97th in the logistics and transportation subfield. His work has been recognized with awards including the Lumley Research Award, the Geoffrey Hewings Award in regional science, the William Miernyk Research Medal, and the Charles Tiebout Prize. His research and insights have been featured in mainstream media outlets such as The Washington Post, Wall Street Journal Video Network, and Forbes. His research has been funded by National Science Foundation, US Department of Homeland Security, US Department of Agriculture, Ohio Department of Transportation, Ford Motor Company, and Lincoln Institute of Land Policy.

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